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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,894	01/18/2000	ANIL K. AGARWAL	A 6930	5628

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WASHINGTON, DC 20037-3213

EXAMINER

NGUYEN, STEVEN H D

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 01/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/462,894

Applicant(s)

AGARWAL, ANIL K.

Examiner

Steven HD Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This action is in response to the amendment filed on 9/15/2003. Claims 4, 10-11 have been withdrew and claims 1-3, 5-9 and 12-39 are pending in the application.

Please clarify if the claims 4, 10-11 are canceled or not. If the claims are canceled. Please cancel them. Do not use the term withdraw because it only use for restriction and selection.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. As claim 15 rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited. "claim 15 is two sentences".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 10-16, 27-28 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Raychaudhuri (USP 5638371).

Regarding claims 10-12 and 14-16, Raychaudhuri discloses an arrangement of signals in a cell/packet frame ATM cells; frame relay packets and Internet packets with compressed header comprising a first number of bytes representing an original header portion comprising a second number of bytes, said first number being less than said second number; and a payload portion wherein said first number comprises two octets and said second number comprises four octets (Fig 2 and col. 8, lines 45-56).

Regarding claim 13, Raychaudhuri discloses an arrangement of signals in a cell/packet frame with compressed header comprising a first number of bytes representing an original header portion comprising a second number of bytes, said first number being less than said second number; and a payload portion wherein said first number comprises at least one octet and said second number comprises at least two octets (Fig 2 and col. 8, lines 45-56).

Regarding claims 27-28 and 30, Raychaudhuri discloses a method of communicating cell/packets, each comprising a header portion and a payload portion, in a modified frame format for a communication system, said system comprising at least two local area networks that are connected by a satellite/wireless communication link, comprising (a) separating said header portion and said payload portion for each cell/packet; (b) identifying N of M header octets in said header; (c) compressing said N header octets into L octets using a look up table by comparing N octets to the content of a header compression table containing index values; (d) combining said L

octets with said payload portion; (e) transmitting said combined L octets and payload portion within a frame; (f) receiving said frame; (g) separating said L octets from said payload; (h) decompressing said L octets into N header octets by comparing said L octets to the content of a header decompression table containing N header octets; (i) generating M header octets from said N header octets; and (J) combining said M header octets with said payload portion to create a cell/packet (Fig 3, Ref 76 discloses a method for receiving an ATM header then translated it into a compressed ATM header contains 2 bytes by searching the translation table and combining the compressed header with payload and 2 bytes wireless header to form a wireless ATM frame).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1, 3-9, 17-26, 32 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri (USP 5638371) in view of Raychaudhuri (USP 5684791).

Regarding claims 1, 4-9, 17-26, 32 and 37-39, Raychaudhuri '371 discloses A communication system for efficiently transmitting information signals in discrete cell/packets comprise ATM cells, frame relay packets and Internet packets, said system comprising at least two local area networks that are connected by a wireless communication link, each local area network comprising a switch for providing a plurality of cell/packets, each cell/packet comprising a HEC header and a payload; an interface for connecting said switch to said wireless communication link (Figs 1 and 2 discloses a ATM network used to link two wireless local network); furthermore, an interface includes a WATM/ATM header conversion (Fig 3, Ref 76 for translating standard ATM header into compressed header and combined compressed header with payload, then generating a wireless ATM frame by using a lookup table and using VC to map with the allocated slot; see col. 3, lines 10-20, col. 4, lines 54-67; col. 8, lines 45-56 and Col. 9, lines 45-49). However, Raychaudhuri '371 fails to disclose a processing step from ATM layer to Physical layer. In the same field of endeavor, Raychaudhuri '791 discloses said interface comprising means for discriminating each cell/packet in said plurality of cell/packets; means for detecting a header in each of said cell/packets and for separating said header from payload; means for compressing said separated header using a look up table; and means for combining said compressed header with said payload to form compressed header cells (Fig 2 discloses separating the header and payload of the received cell; the header will be compressed into 2 octets by using lookup table to translate ATM header into compressed ATM header and merging the compressed header with payload and generating a frame which includes frame header,

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compressed header, payload and CRC fields for transmitting onto wireless); a frame assembler for assembling said compressed header cells into a frame; and means for transmitting said assembled frame (Fig 3a) and means for receiving said transmitted frames frame from said wireless communication link; and a frame disassembler for disassembling said frames into a plurality of compressed header cell/packets and said interface further comprises means for discriminating each compressed header cell in said plurality of compressed header cells; means for detecting a header in each of said compressed header cells and for separating said header from payload; means for decompressing said separated header; and means for combining said decompressed header with said payload to form cell/packets (Fig 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a process of the layers to convert ATM header into an wireless compressed ATM header as disclosed by Raychaudhuri '791 into Raychaudhuri '371. the motivation would have been to reduce the overhead and increase throughput of the wireless interface.

Regarding claim 3, Raychaudhuri '371 comprising an interleaver for interleaving a plurality of said assembled frame (Fig 5).

9. Claim 2 rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri '371 and '791 as applied to claim 1 above, and further in view of French (IEEE, 1996).

Regarding claim 2, Raychaudhuri fail to disclose the claimed invention. However, French 'IEEE discloses encoding means for encoding said assembled frame (Fig 4, QPSK).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a QPSK modem for encoding framed as disclosed by Raychaudhuri

'IEEE into the system of Raychaudhuri. the motivation would have been to reduce the overhead and increase throughput of the wireless interface.

10. Claims 29, 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri '371 as applied to claim 27 above, and further in view of Milway (USP 6122279).

Raychaudhuri '371 does not disclose hashing in translation header. In the same field of endeavor, Milway discloses comparing step comprises at least one of hashing and table look-up techniques and header decompression table has $H1$ entries, wherein $H = 2n$, wherein $n \leq 16$ (Fig 5 for translating old header into new header for routing and table has 2^{16} because VCI has 16 bit).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a hashing method for translating old header into a new header as disclosed by Milway into Raychaudhuri '371. the motivation would have been to reduce the routing delay.

11. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Raychaudhuri '371 as applied to claim 27 above, and further in view of Miyake (USP 5271010).

Raychaudhuri '371 does not fully disclose the claimed invention. In the same field of endeavor, Miyake discloses said transmission step further comprises generating an input entry for a compression table and generating an entry for a decompression table and transmitting said decompression table entry for input into said decompression table; said entry is transmitted in a cell; said entry is created and sent ahead of a user cell (Fig 11, an entry is transmitted within cell and in front of the user cell wherein the table includes these routing tag).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to apply a routing tag for routing the ATM to its destination as disclosed by Miyake into Raychaudhuri '371. the motivation would have been to prevent a data loss.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnston (USP 6064649) discloses a network interface for wireless ATM networks.

Almay (EP 537743) discloses a method and system for translating ATM header.

Wills (USP 6002692) discloses a method and system for translating ATM header.

French (IEEE, 1997) discloses a network interface for wireless ATM networks for transmitting a compressed header.

Raychaudhuri (IEEE, 1992) discloses a network interface for wireless ATM networks for transmitting a compressed header.

Rob (IEEE) discloses a network interface for wireless ATM networks for transmitting a compressed header.

Raychaudhuri (IEEE, 1996) discloses a network interface for wireless ATM networks for transmitting a compressed header.

Chen (USP 6111871) discloses a method and system for switching a compressed and uncompressed header cell.

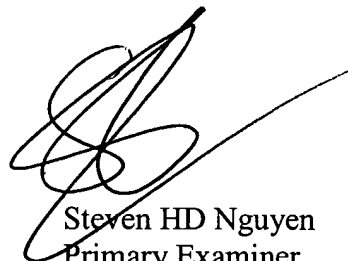
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (703) 308-8848. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy D Vu can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.



Steven HD Nguyen
Primary Examiner
Art Unit 2665
1/10/04